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FACT SHEET

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LOOSE HAY STACKING

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Loose-stacked hay (without baling) is gaining interest among Texas livestock producers. Loose stacking offers several advantages over baling in modern agriculture:

- Lower harvesting cost
- Lower storage and feeding costs
- Less labor involved
- Self-feeding for livestock
- Storage with a slightly higher moisture content
- Lower investment in machinery
- Equal or better quality
- Cattle maintained in good wintering condition
- Inexpensive storage of excess forage.

The disadvantages include:

- Difficulty in transporting stacks
- Reduced marketability of hay
- Inexperience of equipment operator in forming stacks. Improper formation may result in "sink holes," permitting rainfall to enter and spoil a large portion of the stack.
- Inexperience of livestock producer. Limiting the consumption, if desired, is difficult. Also, the hay may fall on cattle as they eat into the stack, if stack is too large or improperly formed.

The quality of hay in stacks can be as high or higher than that in bales. Hay quality is determined largely by: 1) the amount of fertilization it receives; 2) age of the crop when cut for hay; and 3) the curing process. Fertilizer and limestone should be applied to grow high-quality forage. Then forage should be cut for hay before it begins maturing. To preserve quality, hay should be cured and stored as quickly as possible. Hay can be stacked loose at a higher moisture content than it can be baled. Stacking can begin earlier in the morning than baling, before dew is completely evaporated.

Losses of quality and amounts of hay in stacks can be greater than baled hay, if stacks are built unsatisfactorily. Losses in feeding can be minimal, if sufficient stacks are provided to permit cattle to eat without shoving and fighting. Little wastage occurs when hay is of high quality.

Forming the Stack

An enclosure helps to shape the sides of a stack. Metal enclosures are available from equipment dealers. Most are portable, mounted on wheels, with one end opening to permit moving the frame for use in forming a new stack. Panels can be fabricated from 2" x 4" lumber and wire net. Such panels should be at least 5' x 12', with at least 5, preferably 6, panels to form a hexagon-shaped stack. This permits a stack of approximately 20 feet in diameter, containing approximately 12 tons. After stack formation, the panels are moved to form another stack.

Another type of enclosure can be made with net wire fencing material and 10 to 12-foot tall posts. Place posts in the ground to form an enclosure 12 to 15 feet in diameter. Tie wire loosely around the posts, so it can be raised to contain the hay as stack construction progresses. After rounding the top portion, the wire and poles may be moved to form another stack.

A tall pole (18 to 22 feet) placed in the center of the enclosure aids in forming the stacks. It also helps stabilize the stack to prevent its falling on cattle during consumption. However, a pole is less important when stacks are 12 to 15 feet in diameter.

A hydraulically operated front-end stacker serves well in pushing wind-rowed hay into the location of a stack, although "farm-made" equipment may work satisfactorily. The load is then dumped into the enclosure. A laborer inside the

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High-quality hay in loose stacks offers lower harvesting, handling and feeding costs to the owner, and self-feeding for livestock.

Loose hay stacks should be approximately 15 to 18 feet high. The top should be well rounded, without "sink" holes or depression, to shed rainfall.

enclosure helps spread hay evenly. With experience, the tractor operator can construct satisfactory stacks without someone inside to disperse the loose hay, and may construct stacks without an enclosure. Stacks can be constructed as high as the stacking equipment will reach. Large stacks should be permitted to settle 2 or 3 days; then additional hay placed on the stack, and the top formed again.

The top of the stack should be rounded to shed rainfall, but should not have "sink" holes or depressions that would permit rain and moisture to enter and deteriorate hay inside the stack.

Stacking loose hay offers many livestock producers alternatives for conserving labor supply and reducing harvest costs, as shown in Table 1.

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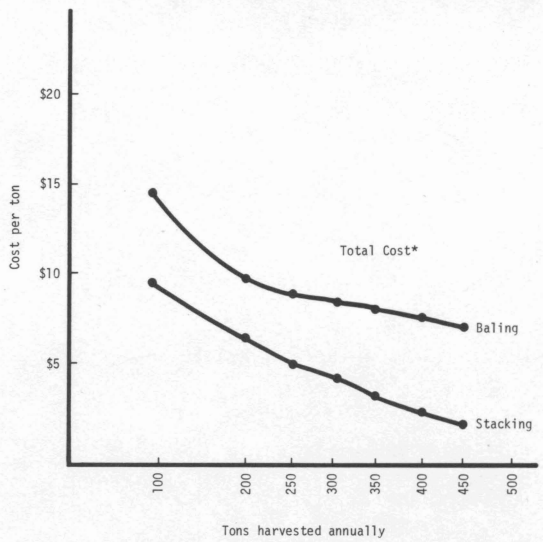

*These costs include 10 cents per bale for hauling baled hay; $1 per ton for shaping loose hay while stacking.

Fixed and operating costs of harvesting hay at various levels of production, baling and stacking.

Table 1. Estimated cost of harvesting hay at various levels of production, baling and stacking.

Tons harvested annually	Cost per ton					
	Baling			Stacking		
	Fixed	Operating	Total	Fixed	Operating	Total
100	$9.50	$5.18	$14.68	$7.89	$1.84	$9.73
200	4.75	5.18	9.93	3.95	1.84	5.79
250	3.80	5.18	8.98	3.16	1.84	5.00
300	3.16	5.18	8.34	2.63	1.84	4.47
350	2.71	5.18	7.89	2.26	1.84	4.10
400	2.38	5.18	7.56	1.97	1.84	3.81
450	2.11	5.18	7.29	1.76	1.84	3.60

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